REMARKS

Claims 1-18 are currently pending in this application. By this response to the non-final Office Action dated June 9, 2008, claims 1-18 are amended, and FIGS. 7-11 are amended. No new matter has been added. Favorable reconsideration of the application in light of the following comments is respectfully submitted.

REJECTIONS UNDER 35 U.S.C. §§ 102 and 103

On page 4 of the Office Action, claims 1, 3, 4, 7, 9, 13, 15, and 16 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,401,166 (Chiba). On page 7 of the Office Action, claims 2, 8, and 15 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Chiba in view of U.S. Patent No. 6,182,240 (Mine). On page 9 of the Office Action, claims 2, 8, and 15 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Chiba in view of U.S. Patent No. 6,873,789 (Nakamura). On page 10 of the Office Action, claims 6, 12, and 18 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Chiba in view of U.S. Patent No. 5,111,444 (Fukushima). Applicants respectfully traverse.

Claims 1, 3, 7, 9, 13, and 15

Amended claim 1 recites, *inter alia*,

> a plurality of erasing blocks each comprising a first number of bytes which are physically erasable as a single unit;
> a partition management information region; and
> a partition region, wherein . . .
> **the region secured between the terminal end of the partition management information region and the starting end of the partition region is <u>larger than one of the erasing blocks</u> and in a state where data is physically erased.**

On page 4 of the Office Action, the "EMPTY REGION" shown in FIG. 4 of Chiba, which spans pages 2-15 of block 1, is equated with "the region secured between the terminal end of the partition management information region and the starting end of the partition region," as originally recited in claim 1. According to Chiba, "[e]ach unit of 16 pages from beginning forms a single block" (col. 5, lines 54-55), "generally, data write is carried out in units of one page, data read is carried out in units of one byte and data erasing is carried out in units of one block" (col. 6, lines 22-24), and a cluster (which is "a minimum unit of memory in which a content of a file managed by the OS is recorded" (col. 8, lines 52-53) is aligned so as to coincide with block boundaries (*see, e.g.*, col. 18, lines 22-27 (discussing embodiments where "a single cluster coincides with a single block" and where "a single cluster corresponds to a plurality of blocks")). As disclosed by Chiba, the "empty region" shown in FIG. 4 is used as "a position adjusting region for coinciding a start position and end position of each of the clusters with the start position and end position of the block" (col. 2, lines 47-51; *see also* col. 8, lines 35-37). Specifically, as shown in FIG. 4, a 14 page empty region is provided between the master boot memory region and partition boot memory region, so as to align the clusters of the FAT partition with the blocks of the block erasing type memory device (*see also* FIG. 10, steps S402 and S403).

Accordingly, the "empty region" is merely provided for alignment, as noted above and described by Chiba, so that "the master boot region, empty region and partition boot region are formed in the block 1" (col. 13, lines 12-13). To achieve this alignment, although the "empty region" may span a plurality of pages, it is always smaller than a block of the block erasing type memory device. Thus, Chiba does not disclose, or even suggest, that "the region secured between the terminal end of the partition management information region and the starting end of

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the partition region is **larger** **than one of the erasing blocks**," as recited in claim 1. Thus, a recording medium according to Chiba would not realize the benefits of a switch region disposed between a partition management information region and a partition region, as appreciated by the inventors and disclosed by the instant application. Therefore, Chiba fails to disclose all of the limitations recited in claim 1, and accordingly does not anticipate claim 1 under 35 U.S.C. § 102. For similar reasons, Chiba does not anticipate claims 7 and 13 which each recite, *inter alia*, that "the region secured between the terminal end of the partition management information region and the starting end of the partition region is **larger than one of the erasing blocks**," as well as claims 3, 9, and 15, which each recite, *inter alia*, "a region which is not used for the recording is **larger than one of the erasing blocks** and is included in the recording format of the file system."

Additionally, claim 1 recites, *inter alia*, that "the region secured between the terminal end of the partition management information region and the starting end of the partition region . . . is in a state where data is physically erased." The Office Action asserts that this limitation is disclosed by Chiba's teaching of a command to "erase each block and then erase the storage content of each block," shown in FIG. 10, step S401 (labeled "ERASE ALL BLOCKS"). Applicants respectfully note that although such a procedure may have been reasonable in 1998 (the date to which Chiba claims priority) with the exemplary 8 M byte device discussed in Chiba (*see* col. 5, lines 47-48) having only 1024 blocks (col. 5, line 55), modern flash memory devices today are approximately 3-4 orders of magnitude larger. Accordingly, to "erase each block and then erase the storage content of each block," as proposed by the Office Action, would amount to erasing a large size, on the order of gigabytes, which requires a great deal of time and is not practical. Accordingly, Chiba does not disclose the recited limitations whereby "the region

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secured between the terminal end of the partition management information region and the starting end of the partition region . . . is in a state where data is physically erased."

In view of the above remarks, Applicants respectfully submit that claims 1, 3, 7, 9, 13, and 15 are not anticipated by Chiba, and respectfully request withdrawal of the rejection of these claims in view of Chiba.

Claims 2, 8, and 14

As noted above, claims 2, 8, and 15 were rejected under similar rationales on page 7 of the Office Action. Applicants respectfully note that the Office Action offers conflicting statements regarding claim 15. On page 7 of the Office Action, it is indicated that "[c]laim 15 is [an] equivalent to claim 3," whereas on page 9 of the Office Action, it is indicated that "[c]laim 15 is [an] equivalent to claim 2." It does not appear that both the rationale for rejecting claim 2 and the rationale for rejecting claim 3 apply to the limitations recited in claim 15.

Claim 2 recites, *inter alia*,

> a single address space includes a first address value corresponding to the beginning of the first partition region, a second address value corresponding to the terminal end of the first partition region, and a third address value corresponding to the beginning of the second partition region;
> the first and third address values are recorded in the partition management information region;
> the second and third address values are not consecutive, and are separated by at least three consecutive address values corresponding to a switch region located between the first and second partition regions.

As originally filed, claim 2 recited "a predetermined region . . . secured between a terminal end of the (N-1)th partition region and a starting end of the Nth partition region," which the Office Action equated with the "replacement areas" shown in FIG. 2 of Mine, each of which corresponds to a respective "data area." According to Mine, "[w]hen the data area includes a

defective portion not used for recording or reproduction due to a scratch, the replacement area provides a portion in the place of the defective portion" (col. 6, lines 45-48). Further, "[a]ddresses representing positions on the disc include two types: physical addresses (or physical block addresses (PBAs)) and logical addresses (or logical block addresses (LBAs))" (col. 6, lines 49-52), where "[t]he logical addresses are provided to the user area used as an access range in ordinary recording or reproduction" (col. 6, lines 59-60). Col. 7, lines 1-7 goes on to explain:

> The logical addresses are not always provided to physically fixed positions on the disc, but are basically provided to record data files. Therefore, **if a physically recording position is shifted behind by one block due to defect management**, or the block of a certain replacement area is used, **such a change is not reflected by the logical address itself.** (*emphasis added*)

In other words, with reference to FIG. 2, although in the physical address space replacement areas are disposed between adjacent data areas, a single uninterrupted logical address space is presented to a user for, among other things, storing a file system such as FAT of UDF on the medium. In fact, to the user (*e.g.*, software responsible for creating a file system on the medium) the conversion between logical and physical addresses is hidden (*see, e.g.*, FIG. 1; col. 11, lines 9-14 ("controller 4 treats the transmitted [address] as a logical address"). Thus, address values recorded on the Mine medium related to a file system would employ logical addresses, which, as discussed above, are in a logical address space uninterrupted by the "replacement areas" relied upon in the Office Action.

Therefore, even if the defect management techniques disclosed by Mine were applied to the medium disclosed by Chiba, claim 2 would not be obvious. The Office Action equated the data regions shown in Chiba, FIG. 4 with the "partition regions" as originally recited, and further asserted that in combination with Mine, there would be a replacement area disposed between each of China's data regions. However, as discussed above, Mine's replacement areas are not

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included in the logical address space employed by a file system written on the Mine medium. Thus, "a second address value corresponding to the terminal end of the first partition region, and a third address value corresponding to the beginning of the second partition region," in accordance with the reading proposed by the Office Action, would fail to allow that "the second and third address values are not consecutive, and are separated by at least three consecutive address values corresponding to a switch region located between the first and second partition regions," as recited in claim 2.

Also, as noted above, claims 2 recites "a first address value corresponding to the beginning of the first partition region, . . . a third address value corresponding to the beginning of the second partition region" and that "the first and third address values are recorded in the partition management information region." The Office Action equated the "master boot memory region 4" of Chiba with the recited "partition management information region," and data regions shown in Chiba, FIG. 4 with the recited partition regions. However, the master boot memory region 4 disclosed by Chiba does not disclose recording addresses corresponding to the beginning of the data regions. Instead, it records "[p]osition of a beginning page of each partition" (col. 8, line 30), which according to col. 9, line 6, is block 1 in FIG. 4. In fact, nothing in Chiba suggests that the data regions shown in FIG. 4 correspond to the "partitions" discussed with respect to the master boot memory region 4. To the contrary, the data regions correspond to the shown clusters, which are addressed by the FAT, rather than master boot memory region 4 (*see* FIG. 5). Thus, the features relied upon in rejecting claim 2 do not read upon all of the limitations required by claim 2.

Additionally, claim 2 recites, *inter alia*, that "the switch region is physically erased." As discussed above with respect to claim 1, modern nonvolatile recording media are too large to be

practical to "erase each block and then erase the storage content of each block," as proposed on page 8 of the Office Action with reference to Chiba, FIG. 10, step S401. Thus, it would not have been obvious, *at the time of invention of the claimed subject matter of the instant application*, for one of skill in the art to have produced a medium according to all of the recited limitations, including that "the switch region is physically erased."

For at least the above reasons, claim 2 is not obvious in view of the proposed combination of Chiba and Mine, as the features relied in the rejection of claim 2 do not make obvious all of the recited limitations, and the combination of the references does not bridge this gap. For similar reasons, claims 8 and 14 are also not obvious in view of the cited art. Accordingly, Applicants respectfully request withdrawal of the rejection of claims 2, 8, and 14 under 35 U.S.C. § 103.

Claims 4, 10, and 16

Claim 4 recites, *inter alia*,

> a partition management information region;
> and a partition containing a FAT file system; wherein
> an information on a start position of the partition is recorded in the partition management information region;
> the partition comprises a partition boot information region and a file allocation table region.

Despite the disclosure of a feature employing the same terminology as recited in claim 4 (*i.e.*, the "partition boot memory region" occupying page 16 of block 1 in Chiba, FIG. 4), the Office Action asserts that master boot memory region 4 teaches the recited "partition boot information region." Amended claim 4 clarifies that the recording medium comprises a partition management information region and a partition, said partition comprising a partition boot information region and a file allocation table region, as is clearly described in the instant

application. Thus, amended claim 4 makes clear that master boot memory region 4 of Chiba

does not teach the recited "partition boot information region," in part because it is not included in

the recited partition. Therefore, the proposed reading of features disclosed by Chiba does not

successfully read upon claim 4, and Chiba does not anticipate claim 4. Similarly, the proposed

reading of features from Chiba does not read upon claims 10 and 16, which each recite, *inter*

alia,

> a partition management information region and a partition containing a
> FAT file system are set in the recording medium;
> an information on a start position of the partition is recorded in the
> partition management information region;
> the partition comprises a partition boot information region and a file
> allocation table region.

Accordingly, Applicants respectfully request withdrawal of the rejection of claims 4, 10,

and 16 under 35 U.S.C. § 102.

Claims 5, 11, and 17

It is respectfully noted that page 9 of the Office Action appears to incorrectly indicate

that claim 16 was rejected under 35 U.S.C. § 103(a). First, page 10 indicates that it is claim 17,

not claim 16, which was "rejected under similar rationale" to claim 5. Second, page 7 indicates

that claim 16 is anticipated by Chiba under 35 U.S.C. § 102.

Claim 5 recites, *inter alia*,

> a partition management information region; and
> a partition containing a UDF file system, wherein
> an information on a start position of the partition is recorded in the
> partition management information region,
> the partition comprises a partition descriptor information region and a
> space bit map region,
> an information on a start position of the space bit map region is recorded
> in the partition descriptor information region.

The Office Action asserts that the recited "partition descriptor information region" is taught by Chiba's master boot memory region 4. However, amended claim 5 clarifies that the recited "partition descriptor information region" is included in the recited partition. Thus, amended claim 5 makes clear that master boot memory region 4 of Chiba does not teach the recited "partition descriptor information region," in part because it is not included in the recited partition. Therefore, the proposed reading of features disclosed by Chiba does not successfully read upon claim 5, and Chiba does not teach the features on claim 5, as asserted by the Office Action. Similarly, the proposed reading of features from Chiba does not read upon claims 11 and 17, which each recite, *inter alia*,

> a partition management information region and a partition containing a
> UDF file system are set in the recording medium;
> an information on a start position of the partition is recorded in the
> partition management information region;
> the partition comprises a partition descriptor information region and a
> space bit map region.

The further teachings of Nakamura do not bridge the above gaps between the claims and Chiba. Accordingly, Applicants respectfully request withdrawal of the rejection of claims 5, 11, and 17 under 35 U.S.C. § 103.

Claims 6, 12, and 18

Claims 6, 12, and 18 each recite, *inter alia*,

> the file allocation table region indicates that **a continuous series of at
> least three clusters each has a state value indicating a cluster is not to be
> written to** because it is a defective cluster, a reserved cluster, or an already-used
> cluster.

The cited art does not make obvious that "a continuous series of at least three clusters each has a state value indicating a cluster is not to be written to," as recited in claims 6, 12, and 18.

Additionally, claims 6, 12, and 18 each recite, *inter alia*,

> a region of the user data region corresponding to the continuous series of at least three clusters is physically erased.

The Office Action asserts that the previous recitation that "a region of the cluster of the user data region corresponding to the particular cluster of the state information is in a state where data is physically erased" was disclosed by Chiba's teaching of a command to "erase each block and then erase the storage content of each block," shown in FIG. 10, step S401 (labeled "ERASE ALL BLOCKS"). As discussed above with respect to claim 1, modern nonvolatile recording media are too large to be practical to "erase each block and then erase the storage content of each block," as proposed by the Office Action. Thus, it would not have been obvious, *at the time of invention of the claimed subject matter of the instant application*, for one of skill in the art to have produced a medium according to all of the recited limitations, such that the recited region is physically erased, as recited in claims, 6, 12, and 18.

In view of the above remarks, Applicants respectfully submit that claims 6, 12, and 18 are not obvious in view of the cited art, and request the withdrawal of the rejection of claims 6, 12, and 18 made under 35 U.S.C. § 103.
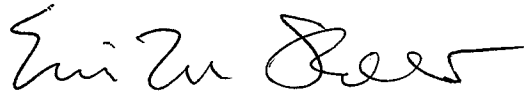
CONCLUSION

Accordingly, it is urged that the application, as now amended, is in condition for allowance, an indication of which is respectfully solicited. If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, Examiner is requested to call the undersigned attorney at the telephone number shown below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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